Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

Claims 1 – 11 (cancelled)

Claim 12 (currently amended): A method which may be used for remotely managing or controlling an electric arc welding shop utilizing at least one welding torch, said method comprising:

a) feeding each torch at least one consumable wire;
b) moving each consumable wire with a wire speed (V);
c) subjecting each wire to an electrical current of intensity (I);
d) determining, by means of a speed sensor, at least one wire speed value (V), wherein said wire speed value (V) is the average speed at which each wire feeds each torch over a given period (T);
e) determining, by means of a current sensor, at least one current intensity value (I), wherein said current intensity value (I) is the average current which each wire is subjected to over said period (T);
f) acquiring, by means of an of an acquisition means, at least one value of said wire speed value (V) and at least one value of said current intensity value (I);
g) transmitting at least one of said wire speed value (V) or said current intensity value (I) to a data processing unit, wherein said data processing unit is removed from said speed sensor or said current sensor;
h) determining, with said data processing unit, at least one productivity parameter, wherein said productivity parameter is determined from said transmitted wire speed value (V) or said transmitted current intensity

value (I), and wherein said productivity parameter comprises at least one member selected from the group consisting of:

1) duty factor (DF); and

2) deposition rate (DR); ~~and~~

i) remotely transmitting by means of a communication network, a value to a central remote control device, wherein said value comprises at least one member selected from the group consisting of:

1) said duty factor (DF);

2) said deposition rate (DR);

3) said wire speed value (V); and

4) said current intensity value (I); and

j) defining manufacturing profiles for categories of workpieces welded in the shop based on duty factor and deposition rate for the categories of workpieces depending on a generator used in the welding;

k) organizing the profiles in the form of a library of models for use in scheduling work in the welding shop.

[[optimizing the operation of the shop based upon said value remotely transmitted to said central remote control device, wherein the welding efficiency of the shop is increased by an average of at least about 41%.]]

Claim 13 (previously presented): The method according to Claim 12, wherein the shop comprises from about 2 to about 20 welding torches.

Claim 14 (previously presented): The method according to Claim 12, further comprising updating the models in the library based on duty factor and deposition rates

[[wherein each said torch is fed at least 1 wire]].

Claim 15 (previously presented): The method according to Claim 14, wherein each said torch is fed 1 or 2 wires.

Claim 16 (cancelled)

Claim 17 (previously presented): The method according to Claim 12, wherein said method further comprises storing at least one value selected from the group consisting of: wire speed value (V), current intensity value (I), duty factor (DF), and deposition rate (DR).

Claim 18 (previously presented): The method according to Claim 12, wherein said method further comprises a step of processing at least one value selected from the group consisting of the wire speed values (V) or the intensity values (I).

Claim 19 (cancelled)

Claim 20 (previously presented): The method according to Claim 18, wherein processing each said wire speed value (V) or each said intensity value (I) consists of calculating at least one productivity parameter selected from the duty factor (DF) and the deposition rate (DR) for each torch or optionally the average value of these parameters for all the torches.

Claim 21 (cancelled)

Claim 22 (cancelled)

Claim 23 (Currently Amended): A system for remotely managing or controlling an electric arc welding shop in which at least one welding torch is utilized, each fed at

least one consumable wire, each consumable wire moving with a wire speed (V) and subjected to an electrical current of intensity (I), which comprises:

(a) a first determination means for each torch, comprising a speed sensor for determining at least one wire speed value (V) representative of the average speed at which each wire feeds each torch over a given period (T) and/or comprising at least one current sensor for determining at least one current intensity value (I) representative of the average current to which each wire is subjected over the given period (T);

(b) a second determination means that cooperates with the first determination means in order to determine, from at least each speed value (V) of the wire or each intensity value (I) of the electrical current determined by the first determination means, at least one productivity parameter selected from the duty factor (DF) and the deposition rate (DR) for each torch of the shop and/or optionally the average value of these parameters for all the torches of the shop;

(c) a remote transmission means which cooperates with a communicating network for remotely transmitting data to a central remote control device, wherein said data comprises at least one member selected from the group consisting of:

1) said duty factor (DF);
2) said deposition rate (DR);
3) said wire speed value (V); and
4) said current intensity value (I); and

d) a central remote control device for <u>defining manufacturing profiles for categories of workpieces welded in the shop based on duty factor and deposition rate for the categories of workpieces depending on a generator used in the welding and organizing the profiles in the form of a library of models for use in scheduling work in the welding shop.</u>

[[saving, analyzing, and/or processing at least part of said remote transmitted data; wherein said central remote control device allows for the optimization of the weld shop such that welding efficiency is increased by a shop average of at least about 41%]].

Claim 24 (previously presented): The system according to Claim 23, wherein said system further comprises storing means for storing at least one selected from the group consisting of:

(a) said duty factor (DF);
(b) said deposition rate (DR);
(c) said wire speed value (V); and
(d) said current intensity (I).

Claim 25 (cancelled)

Claim 26 (previously presented): The system according to Claim 23, wherein said system further comprises:

a) a means for acquiring and/or storing at least one wire speed value (V) determined by the speed sensor and/or at least one current intensity value (I) determined by the current sensor; and/or
b) a means for processing the wire speed values (V) and/or the intensity values (I) before and/or after storage.

Claim 27 (cancelled)

Claim 28 (previously presented): The method of Claim 12, wherein said acquisition means is connected to said sensors by a connection means, wherein said connection means comprises at least one member selected from the group consisting of:

a) analog communication ports;

b) digital communication ports; and

c) acquisition paths.

Claim 29 (cancelled)

Claim 30 (previously presented): The method of Claim 12, wherein:

a) said data processing unit processes at least one value selected from the group consisting of said wire speed values (V) and said intensity values (I);

b) said data processing unit calculates at least one productivity parameter selected from the group consisting of said duty factor (DF) and said deposition rate (DR).

Claim 31 (previously presented): The method of Claim 30, wherein said data processing unit is located near or in the shop.

Claim 32 (previously presented): The method of Claim 30, wherein said data processing unit is a central computing unit.

Claim 33 (previously presented): The method according to Claim 30, further comprising adjusting the workload of each torch over time based upon the productivity parameter.

Claim 34 (previously presented): The method of Claim 12, further comprising extracting trends from said remotely transmitted values of said duty factor, said deposition rate (DR), said wire speed value (V), and said current intensity value (I).

Claim 35 (previously presented): The method of Claim 34, further comprising activating an alarm or carrying out a feed back operation on at least one torch based upon said extracted trends.

Claim 36 (previously presented): The system of Claim 23, wherein said central remote control device extracts trends from said remotely transmitting data, wherein said data comprises at least one member selected from the group consisting of:

a) said duty factor (DF);
b) said deposition rate (DR);
c) said wire speed value (V); and
d) said current intensity value (I).

Claim 37 (cancelled)

Claim 38 (previously presented): The system of Claim 23, further comprising an acquisition means, wherein:

a) said acquisition means is connected to said sensors by a connection means; and
b) said connection means comprises at least one member selected from the group consisting of:
    1) analog communication ports;
    2) digital communication ports; and
    3) acquisition paths.

Claim 39 (previously presented): The system of Claim 23, wherein said acquisition means acquire, store, and/or process at least some of the value sent by said sensors, or by said data processing and storage facilities associated with said sensors.

Claim 40 (previously presented): The system of Claim 36, wherein said data processing unit comprises a central computing unit.

Appl. No. 10/630,241
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Amdt. dated December 27, 2006
Reply to Office Action of September 27, 2006

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e) determining, by means of a current sensor, at least one current intensity value (I), wherein said current intensity value (I) is the average current which each wire is subjected to over said period (T);
f) acquiring, by means of an of an acquisition means, at least one value of said wire speed value (V) and at least one value of said current intensity value (I);
g) transmitting at least one of said wire speed value (V) or said current intensity value (I) to a data processing unit, wherein said data processing unit is removed from said speed sensor or said current sensor;
h) determining, with said data processing unit, at least one productivity parameter, wherein said productivity parameter is determined from said transmitted wire speed value (V) or said transmitted current intensity

value (I), and wherein said productivity parameter comprises at least one member selected from the group consisting of:

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i) remotely transmitting by means of a communication network, a value to a central remote control device, wherein said value comprises at least one member selected from the group consisting of:

1) said duty factor (DF);

2) said deposition rate (DR);

3) said wire speed value (V); and

4) said current intensity value (I); and

j) defining manufacturing profiles for categories of workpieces welded in the shop based on duty factor and deposition rate for the categories of workpieces depending on a generator used in the welding;

k) organizing the profiles in the form of a library of models for use in scheduling work in the welding shop.

[[optimizing the operation of the shop based upon said value remotely transmitted to said central remote control device, wherein the welding efficiency of the shop is increased by an average of at least about 41%.]]

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(b) a second determination means that cooperates with the first determination means in order to determine, from at least each speed value (V) of the wire or each intensity value (I) of the electrical current determined by the first determination means, at least one productivity parameter selected from the duty factor (DF) and the deposition rate (DR) for each torch of the shop and/or optionally the average value of these parameters for all the torches of the shop;

(c) a remote transmission means which cooperates with a communicating network for remotely transmitting data to a central remote control device, wherein said data comprises at least one member selected from the group consisting of:

1) said duty factor (DF);
2) said deposition rate (DR);
3) said wire speed value (V); and
4) said current intensity value (I); and

d) a central remote control device for <u>defining manufacturing profiles for categories of workpieces welded in the shop based on duty factor and deposition rate for the categories of workpieces depending on a generator used in the welding and organizing the profiles in the form of a library of models for use in scheduling work in the welding shop.</u>

[[saving, analyzing, and/or processing at least part of said remote transmitted data; wherein said central remote control device allows for the optimization of the weld shop such that welding efficiency is increased by a shop average of at least about 41%]].

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(a) said duty factor (DF);
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(c) said wire speed value (V); and
(d) said current intensity (I).

Claim 25 (cancelled)

Claim 26 (previously presented): The system according to Claim 23, wherein said system further comprises:

a) a means for acquiring and/or storing at least one wire speed value (V) determined by the speed sensor and/or at least one current intensity value (I) determined by the current sensor; and/or
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b) digital communication ports; and
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a) said data processing unit processes at least one value selected from the group consisting of said wire speed values (V) and said intensity values (I);
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Claim 38 (previously presented): The system of Claim 23, further comprising an acquisition means, wherein:

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Claim 40 (previously presented): The system of Claim 36, wherein said data processing unit comprises a central computing unit.